

MD ENGINEERING, CONSULTING SERVICES

MAGNETIC FIELD COMPENSATION SYSTEM MR-3 FAST

Three axis automatic compensation of magnetic field disturbances
from DC to 10kHz





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Features

- Continuous real time compensation of magnetic field disturbances from DC to 10 kHz
- Typical 50 dB attenuation from DC to 200 Hz, 13 dB @ 9 kHz
- Magnetic field measurement with high resolution sensors
- Rugged analog design, no tedious programming
- Integrated power amplifiers for direct connection of compensation coils
- Field monitor and alarm functions

Applications

- Improvement of electron microscope images (SEM/SDB and TEM), even for Semiconductor Fabs with OHT
- Biomagnetic and paleomagnetic applications
- Compensation of power line frequencies (50/60 Hz) and higher harmonics
- Attenuation of slow or stepped magnetic field changes caused by vehicles, moved magnetic objects, elevators, etc.
- Attenuation at 9 kHz magnetic field induced by overhead transport robots in Wafer Fabs

Specifications

Magnetic field sensor	triaxial fluxgate sensor and triaxial induction coil sensor
Zero drift	< 0.1 nT/K
Noise	< 0.1 nT RMS (0.1 Hz < f < 10 kHz)
Dynamic compensation range	> 6 micro T _{pp} (60 mG _{pp})
Analog outputs	1 V/microT, BNC connectors for X, Y, Z
Bandwidth	0 to 10 kHz (-3 dB)
Digital displays	show incremental DC or true rms AC magnetic field for X, Y, and Z
Resolution	1 nT, with measurement accuracy of plm 1%
Analog meters	show coil current, range plm 3 A
Attenuation @ 50 Hz	typ. 50 dB at sensor position
Attenuation @ 9 kHz	typ. 13 dB at sensor position
Recom. compensation coil impedance	2 ohm
Subject to change	